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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/748,581	12/30/2003	Werner M.A. Grootaert	59469US002	8236

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EXAMINER	
WU, IVES J	

ART UNIT	PAPER NUMBER
1713	

DATE MAILED: 10/07/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No.	Applicant(s)	
	10/748,581	GROOTAERT, WERNER M.A.	
	Examiner	Art Unit	
	Ives Wu	1713	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *08 August 2005*.

2a)☐ This action is **FINAL**. 2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1-33* is/are pending in the application.

4a) Of the above claim(s) *3 and 28-33* is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *1,2,4,5 and 7-9,15-27* is/are rejected.

7)☒ Claim(s) *6 and 10-14* is/are objected to.

8)☒ Claim(s) *1-33* are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☐ The drawing(s) filed on _____ is/are: a)☐ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☐ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08) Paper No(s)/Mail Date _____.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____.
5) ☐ Notice of Informal Patent Application (PTO-152)
6) ☐ Other: _____.

DETAILED ACTION

(1). Applicant's Remark filed on August 8, 2005 has been received and fully considered.

In response to the remarks, the prior Office Action dated on May 6, 2005 is withdrawn since the ground of rejection is improper.

Claim 3 is withdrawn from consideration because it relates to the –NHOH group which is non-elected species.

The new ground of rejection is as following:

Double Patenting

(2). The nonstatutory double patenting rejection is based on a judicially created doctrine grounded in public policy (a policy reflected in the statute) so as to prevent the unjustified or improper timewise extension of the "right to exclude" granted by a patent and to prevent possible harassment by multiple assignees. See *In re Goodman*, 11 F.3d 1046, 29 USPQ2d 2010 (Fed. Cir. 1993); *In re Longi*, 759 F.2d 887, 225 USPQ 645 (Fed. Cir. 1985); *In re Van Ornum*, 686 F.2d 937, 214 USPQ 761 (CCPA 1982); *In re Vogel*, 422 F.2d 438, 164 USPQ 619 (CCPA 1970); and *In re Thorington,* 418 F.2d 528, 163 USPQ 644 (CCPA 1969).

A timely filed terminal disclaimer in compliance with 37 CFR 1.321(c) may be used to overcome an actual or provisional rejection based on a nonstatutory double patenting ground provided the conflicting application or patent is shown to be commonly owned with this application. See 37 CFR 1.130(b).

Effective January 1, 1994, a registered attorney or agent of record may sign a terminal disclaimer. A terminal disclaimer signed by the assignee must fully comply with 37 CFR 3.73(b).

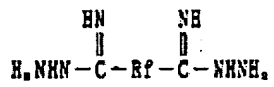
(3). Claims 1-2, 4-5, 7-9 and 15-27 are rejected under the judicially created doctrine of obviousness-type double patenting as being unpatentable over claims 1-29 of U.S. Patent No.US006846880B2 in view of Saito et al (EP0754721A2).

(4). As to component (a) in a composition in **independent claim 1**, Grootaert et al disclose in the patentee's claim 1 – component (a) (Col. 15, line 56-60).

As to the component (b) in a composition in independent claim 1, Grootaert et al **do not teach** a curative comprising a compound having the general formula $X\text{-}Y(\text{-}Z)_n$, where X is a moiety of Formula I: RN=C(A)- where A is $NHNH_2$ wherein each R is H or an alkyl, alkenyl, aryl, alkaryl, or alkenylaryl group, Y is a bond or a linking group, Z is H or an alkyl, alkenyl, aryl, alkaryl, or alkenylaryl group, which may be non-fluorinated, partially-fluorinated, or perfluorinated, or a moiety according to Formula I, which may be the same or different than X, and n is an integer from 1 to 3.

However, Saito et al (EP0754721A2) **teach** a vulcanizing agent in the patentee's claim 1, the general formula is following: (Page 7, line 48-56, page 8, line 1-8)

1. A fluorine-containing elastomer composition, which comprises a fluorine-containing elastomer having a cyano group as a cross-linkable group and a bisamidrazone compound represented by the following general formula as a vulcanizing agent:



wherein

Rf is one of the following groups:
$(CF_2)n$, where n: 1 to 10,
$CFX(OCF_2CFX)mO(CF_2)n$, where X: F or CF_3 ; n: 1 to 10, m: 1 to 2
and
$CFX(OCF_2CFX)pO(CF_2)nO(CFXCF_2O)qCFX$, where X: F or CF_3 ; n: 1 to 10 ; p+q: 6.

The advantages of using vulcanizing agent of general formula claimed by Saito et al is because it improves roll kneadability and processability during the vulcanization-molding considerably, and gives vulcanization products having good heat resistance and solvent resistance (Abstract).

Therefore, it would have been obvious at time the invention was made to replace the curative compound in the composition of Grootaert et al with vulcanizing agent of Saito et al in order to achieve the aforementioned advantages.

(5). As to the limitation of **dependent claim 2**, Saito et al disclose the bisamidrazone compound for use in the patentee's invention being readily prepared by reaction of the corresponding dinitrile compound with hydrazine hydrate (page 3, line 26-27).

(6). As to limitation of **dependent claim 4**, Saito et al disclose the compound of the formula in patentee's claim 1, the difference between the vulcanizing agent disclosed by Saito et al and applicant's claimed formula of curative in instant claim 4 is the number of linking group Y, Applicant's linking group is single CX_2OCX_2, the linking group in Saito et al formula has at least two repeating group of CX_2OCX_2, they are homolog in structure and renders the difference to be an obvious variant. A prima facie case of obviousness may be made when chemical compounds have very close structural similarities and similar utilities. "An obviousness rejection based on similarity in chemical structure and function entails the motivation of one skilled in the art to make a claimed compound, in the expectation that compounds similar in structure will have similar properties." In re Payne, 606 F.2d 303, 313, 203 USPQ 245, 254 (CCPA 1979). See In re Papesch, 315 F.2d 381, 137 USPQ 43 (CCPA 1963) (discussed in more detail below) and In re Dillon, 919 F.2d 688, 16 USPQ2d 1897 (Fed. Cir. 1991) (discussed below and in MPEP § 2144) for an extensive review of the case law pertaining to obviousness based on close structural similarity of chemical compounds. See also MPEP § 2144.08, paragraph II.A.4.(c).

(7). As to limitation of **dependent claims 5, 7, 8 and 9,** Saito et al disclose the compound of formula in patentee's claim 1 (page 7, line 48-page 5, line 6).

(8). As to the limitation of **dependent claim 15**, Grootaert et al disclose in the patentee's claim 14 (Col. 17, line 45-46).

(9). As to the limitation of **dependent claim 16**, Grootaert et al disclose in the patentee's claim 15 (Col. 17, line 47-50).

(10). As to the limitation of **dependent claim 17**, Grootaert et al disclose in the patentee's claim 16 (Col. 17, line 51-54).

(11). As to the limitation of **dependent claim 18**, Grootaert et al disclose in the patentee's claim 17 (Col. 17, line 55-56).

(12). As to the limitation of **dependent claim 19**, Grootaert et al disclose in the patentee's claim 18 (Col. 17, line 57-63).

(13). As to the limitation of **dependent claim 20**, Grootaert et al disclose in the patentee's claim 19 (Col. 18, line 1-3).

(14). As to the limitation of **dependent claim 21**, Grootaert et al disclose in the patentee's claim 20 (Col. 18, line 4-5).

(15). As to the limitation of **dependent claim 22**, Grootaert et al disclose in the patentee's claim 22 (Col. 18, line 8-12).

(16). As to the limitation of **dependent claim 23**, Grootaert et al disclose in the patentee's claim 23 (Col. 18, line 13-14).

(17). As to the limitation of **dependent claim 24**, Grootaert et al disclose in the patentee's claim 26 (Col. 18, line 22-27).

(18). As to the limitation of **dependent claim 25**, Grootaert et al disclose in the patentee's claim 27 (Col. 18, line 29-34).

(19). As to the limitation of **dependent claim 26**, Grootaert et al disclose in the patentee's claim 28 (Col. 18, line 35-42).

(20). As to the limitation of **dependent claim 27**, Grootaert et al disclose in the patentee's claim 29 (Col. 18, line 43-48).

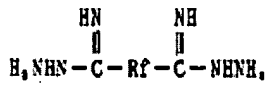
Claim Rejections - 35 USC § 102

(21). The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

> A person shall be entitled to a patent unless –
>
> (b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

(22). Claims 1-2,4-5,7-9,15-21 and 23-24 are rejected under 35 U.S.C. 102(b) as being anticipated by Saito et al (EP0754721A2).

(23). Saito et al disclose a fluorine-containing elastomer composition comprising a fluorine-containing elastomer having a cyano group as cross-linkable group – **claim 1(a)**, and a bisamidrazone compound represented by the following general formula as a vulcanizing agent – **claim 1(b), claims 5,7,8 and 9**:



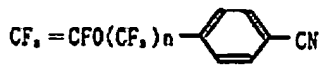
wherein

Rf is one of the following groups:
$(CF_2)n$, $CFX(OCF_2CFX)mO(CF_2)n$ and
$CFX(OCF_2CFX)pO(CF_2)nO(CFXCF_2O)qCFX$

where n: 1 to 10,m: 1 to 2,X:F or CF_3, p+q:8.

The bisamidrazone compound can be readily prepared by reaction of the corresponding nitrile compound with hydrazine (page 3, line 26-27) – **claim 2**. The terpolymer comprises tetrafluorowthylene, perfluoro(lower alkyl vinyl ether) and a perfluoro unsaturated nitrile compound as a fluorine-containing elastomer (page 3, line 29-32) – **claims 15, 16, 17, 18 and 21**. As a perfluoro unsaturated nitrile compound as a cross-linking site monomer, the following compounds are used – **claim 19**:

$CF_2=CFO(CF_2)_nOCF(CF_3)CN$ (n: 2 to 6)
$CF_2=CFO[OCF_2CF(CF_3)]_nO(CF_2)_mCN$ (n: 1 to 2, m: 1 to 6)
$CF_2=CFO(CF_2)_nCN$ (n: 1 to 8)
$CF_2=CF[OCF_2CF(CF_3)]_nOCF_2CF(CF_2)CN$ (n: 1 to 2)



(n: 1 to 6)

The terpolymer further copolymerizes with fluorinated olefins or various vinyl compounds which includes vinylidene fluoride, monofluorethylene, trifluoroethylene etc., the vinyl compounds includes ethylene, propylene, 1-butene, ethyl vinyl ether, vinyl chloride etc, (page 3, line 54 – page 4, line 2) – **claim 24**. The fluorine-containing elastomer composition can further contain appropriate ingredients, for example, an inorganic filler (page 4, line 6-7) – **claim 20**. The fluorine-containing elastomer composition is effectively utilized as a material for vulcanization-molding of O-rings, sheets etc. to be used under severe conditions (Page 4, line 18-19) – **claim 23**.

(24). As to the limitation of **dependent claim 4**, the difference between the vulcanizing agent disclosed by Saito et al and applicant's claimed formula of curative in instant claim 4 is the number of linking group Y, Applicant's linking group is single CX_2OCX_2, the linking group in Saito et al formula has at least two repeating group of CX_2OCX_2, they are homolog in structure and renders the difference to be an obvious variant. A prima facie case of obviousness may be made when chemical compounds have very close structural similarities and similar utilities. "An obviousness rejection based on similarity in chemical structure and function entails the motivation of one skilled in the art to make a claimed compound, in the expectation that compounds similar in structure will have similar properties." In re Payne, 606 F.2d 303, 313, 203 USPQ 245, 254 (CCPA 1979). See In re Papesch, 315 F.2d 381, 137 USPQ 43 (CCPA 1963) (discussed in more detail below) and In re Dillon, 919 F.2d 688, 16 USPQ2d 1897 (Fed. Cir. 1991) (discussed below and in MPEP § 2144) for an extensive review of the case law pertaining to obviousness based on close structural similarity of chemical compounds. See also MPEP § 2144.08, paragraph II.A.4.(c).

Claim Rejections - 35 USC § 103

(25). The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

The factual inquiries set forth in *Graham* **v.** *John Deere Co.*, 383 U.S. 1, 148 USPQ 459 (1966), that are applied for establishing a background for determining obviousness under 35 U.S.C. 103(a) are summarized as follows:

1. Determining the scope and contents of the prior art.
2. Ascertaining the differences between the prior art and the claims at issue.
3. Resolving the level of ordinary skill in the pertinent art.
4. Considering objective evidence present in the application indicating obviousness or nonobviousness.

(26). Claims 22, 25 and 26 are rejected under 35 U.S.C. 103(a) as being unpatentable over Saito et al (EP0754721A2) in view of Irie et al (US20040147676A1).

(27). As to additional curative in the **dependent claim 22**, Saito et al do no teach additional curative in the patentee's composition.

However, Irie et al teach the use of a crosslinking accelerator ([0067]). For bisamidrazone crosslinking agent and bisamidoxime crosslinking agent, as the case demands, crosslinking accelerators may be used in combination ([0070] – [0075]). Examples of the crosslinking accelerator are for instance, triallyl cyanurate, triallyl isocyanurate, and the like ([0078]) – **claims 25 and 26**.

The advantages of using the additional curative is to accelerate the crosslinking.

Therefore, it would have been obvious at time the invention was made to include the additional curatives of Irie et al in the fluorine-containing elastomer composition of Saito et al in order to achieve the aforementioned advantages.

Allowable Subject Matter

(28). Claims 6 and 10-14 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

Response to Arguments

Applicant's arguments with respect to claims 1-27 have been considered but are moot in view of the new ground(s) of rejection.

Conclusion

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Ives Wu whose telephone number is 571-272-4245. The examiner can normally be reached on 8:00 - 5:00.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, David Wu can be reached on 571-272-1114. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

Examiner: Ives Wu

Art Unit: 1713

Date: October 3,2005

DAVID W. WU
SUPERVISORY PATENT EXAMINER
TECHNOLOGY CENTER 1700